



THE AMERICAN RADIO RELAY LEAGUE, INC.

INTERNATIONAL SECRETARIAT OF THE INTERNATIONAL AMATEUR RADIO UNION

ADMINISTRATIVE HEADQUARTERS NEWINGTON, CONNECTICUT, U.S.A. 06111-1494

TELEPHONE 860-594-0200 • FAX 860-594-0259 • INTERNET: arrrl@arrl.org • WWW: <http://www.arrl.org/>

OFFICE OF THE GENERAL COUNSEL
1233-20th Street, N.W., Suite 204
Washington, D.C. 20036
(202) 296-9100 telephone
(202) 293-1319 facsimile

November 19, 1996

Via Hand Delivery

Michele Farquhar, Esquire
Chief, Wireless Telecommunications Bureau
Federal Communications Commission
2025 M Street, N.W., Room 5002
Washington, D.C. 20554

Re: Amateur Radio Spread-Spectrum
Communications, RM-8737.

Dear Ms. Farquhar:

The American Radio Relay League, Incorporated, the national association of amateur radio operators in the United States, is in receipt of copies of two letters addressed to you from Mitchell Lazarus, Esq., on behalf of Symbol Technologies, Inc., a manufacturer of Part 15, unlicensed spread-spectrum devices which operate at 902-928 MHz, and 2400-2483.5 MHz, and dated November 5 and 13, 1996, respectively. The letters object to the amateur radio rules changes sought in RM-8737, a petition for rule making filed by the League December 12, 1995, almost a year ago.

The Symbol letters, considered together, generally object to the portion of the petition which would permit greater flexibility in the use of and experimentation with spreading codes by amateurs in the amateur allocations in which spread-spectrum communications are currently authorized. They also seek to limit amateur power in those bands, all out of an expressed fear of interference to the use of Part 15 devices in those bands. Even though the current amateur rules permit spread-spectrum operation at 100 watts, Symbol notes it would be content if amateur power and antenna gain for spread-spectrum operation were limited to the same levels (1 watt and 6 dBi) as they are for Part 15 devices.

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First of all, the Symbol letters are late in coming, and there is no showing why those could not have been submitted timely, so that the entire range of commenters could have the opportunity to address them. The petition was filed almost a year ago, and the comment dates closed February 19, 1996. Now, when the Commission is prepared to release a Notice of Proposed Rule Making on the matter, Symbol attempts to block it.

More fundamentally, however, Symbol simply has no basis for objecting to any of the Amateur Service rules changes that the League proposes, as it has no allocation status in the subject bands at all. The League objects in the ***strongest possible terms*** to the placing of restrictions, or the refusal to eliminate unnecessary regulatory barriers, on amateur radio experimentation based on some inchoate, unquantified fear of future interference to Part 15 devices. The Commission has absolutely no basis for restricting any licensed radio service in the performance of its intended operations in authorized allocations, in order to protect Part 15 devices from anticipated interference. Those devices have no allocation status whatsoever in the bands in which they are allowed to operate at sufferance.

Furthermore, the Symbol letters contain no basis whatsoever for any proposed restriction on amateur communications, using spread-spectrum or narrowband modes. Amateur spread-spectrum communications are permitted under existing rules in amateur allocations, including 902-928 MHz and 2400-2450 MHz, at power levels up to 100 watts PEP, and have been so authorized for more than ten years. During that time, the League has not heard of one

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instance, not one, of interference from amateur spread-spectrum communications to Part 15 devices. The November 5, 1996 Symbol letter admits such¹. The instant petition proposes, in fact, to limit amateur power output by imposing automatic transmitter power control requirements, limiting the communications to those levels necessary to maintain communications. That is a limitation that does not exist now, but one which fits conceptually within the general scheme of amateur regulation.

Part 15 devices have no allocation status, and have had none, internationally or domestically. They are permitted on an "at-sufferance" basis: they must not cause interference to licensed radio services, and they must tolerate interference received from licensed radio services in the same bands. The Communications Act of 1934 is devoid of any authority to accord Part 15 type devices any allocation status, or interference protection from licensed services, at all; the only authority to permit unlicensed devices under the Act is with respect to radio control and citizen's radio service facilities, and, more recently, marine and aviation services. 47 U.S.C. §307(e). The only provision for Part 15 devices in the Communications Act is for the Commission to regulate the interference potential of such devices by "reasonable regulation". 47 U.S.C. §302. This the Commission has done by permitting operation of such devices in bands allocated, on a primary basis, to one or more licensed radio services, where the operation of the

¹ At page 4 of the Symbol letter, it is stated that:

The Commission's rules already permit amateur spread-spectrum operations in the Part 15 bands. But in contrast to Part 15, which is subject to a maximum one watt output power and 6 dBi antenna gain, amateur operations can use up to 100 watts output power with no limitation on antenna gain. In spite of this extreme disparity in authorized power, harmful interference from amateur operations to Part 15 has not been a significant problem to date.

Of course, Symbol, like other Part 15 manufacturers, fails to recognize that the Amateur Service is a licensed service, which is intended to encourage experimentation. Part 15 devices, including intentional radiators, operate in no radio service, have no allocation status, and are entitled to no protection whatsoever in the bands in which they are permitted to operate with significant power levels.

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unlicensed devices has been determined to be unlikely to cause interference to the licensed radio services. The benefits to the manufacturers of such non-licensed devices under the circumstances are several: their products need not be licensed before they can be used by the purchasers thereof; the equipment itself need only be authorized by the Commission by type, pursuant to Part 2 Equipment Authorization requirements; they can operate with some degree of frequency agility and bandwidth variability; and they can be used for an infinite number of purposes, without any eligibility determinations on the part of the user. The devices can be made less expensively, and operated without regulatory effort by the owner. These benefits are realized by Symbol and other manufacturers at the cost of an absence of any priority in the subject bands relative to licensed radio services.

The thrust of Symbol's correspondence is that the status of Part 15 devices should be "elevated" to a protected status as against licensed services in the subject bands. This, however, would be tantamount to a change in the entire conceptual framework of regulation of Part 15 devices: they would be entitled to the benefits of a licensed radio service but without any of the obligations attendant to shared, licensed users in shared bands. This is inequitable in the extreme.

The real fear of Symbol, which precipitated its letters to you, is that amateurs will simply take Symbol's Part 15 products, attach amplifiers to them, and use them in the same bands. In some instances, amateurs might do exactly that, though it certainly is not the intention of the proposed rule change. Even if amateurs do use those devices, however, there can be no interference to users of Symbol Part 15 devices, unless each of Symbol's devices uses the exact same spreading codes and sequences. If that is the case, it would be impossible for multiple Part 15 devices to operate in the same geographic areas, without taking into account amateur operation in the same bands using the same basic devices. If the devices use different spreading sequences, then they will not interact with each other, whether the amateur station is operating at maximum amateur power or not. Thus, Symbol's assertion that amateur spread-spectrum operation will "obliterate any Part 15 operation in its path" is technically flawed rhetoric, as is the entire premise of its concern. Finally, since amateurs can operate

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under existing rules in the subject bands using up to 1500 watts PEP output with narrowband emissions, it is difficult to understand Symbol's concern about amateur spread-spectrum operation in the subject bands. Of far more concern to Symbol should be the operation of multilateration AVM in the 902-928 MHz band.²

The Commission has just released its *Report and Order* in ET Docket 94-32, (FCC 96-390, released October 18, 1996) in which it refused to elevate the regulatory status of Part 15 devices in the 2400-2483.5 MHz band, and reaffirmed the primary allocation status of the Amateur Service in the 2390-2400 MHz and 2402-2417 MHz bands. In so doing, at paragraph 34 thereof, the Commission stated:

Further, we note that unlicensed devices enjoy a certain flexibility with their unlicensed status and are being effectively used under existing rules. In this regard, we deny Motorola's proposal to establish an operating parameter under which Part 15 devices would be presumed not to cause interference. Accordingly, we will not grant unlicensed devices additional rights to the spectrum at this time; however, if problems develop, we will consider this issue at that time.

Rather than restrict the flexibility of an experimental radio service in pursuing new advances in technology using its own frequency allocations, the League suggests that the rule changes governing amateur spread-spectrum operation, which simply allow for experimentation with a wider number of spreading codes than do current rules, should be implemented as proposed in the League's petition.

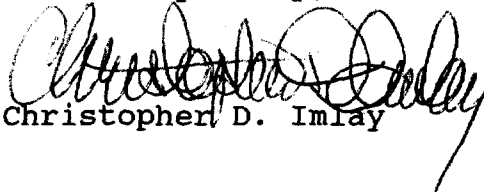
² A good example of the regulatory gibberish in the Symbol letters is the reference to the definitional rule for Part 15 devices in the LMS proceeding, whereby Part 15 devices will be determined not to cause interference to LMS systems if they operate at, or below, certain operating parameters specified in the rules. 47 C.F.R. §§90.353, 90.361. Symbol states that this accommodation is somehow precedent "under which the Commission can give Part 15 the protection it needs from amateur spread spectrum". The issue Symbol wants to raise, however, has nothing to do with Part 15 interference to amateurs. Rather, it wants protection from interference from amateur stations. It is neither entitled to any, nor has it established any likelihood that there is going to be any.

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The November 13 Symbol letter acknowledges that there will be released soon a Notice of Proposed Rule Making on the League's petition, which would be timely. It asks that the Commission raise the issue of appropriate power levels and antenna gains in the Notice. There is no need to discuss that issue at all in connection with Part 15 devices. The League does not intend, on the one hand, to encourage interference to any licensed radio service, or to consumer electronic devices. The League's proposed spread-spectrum rules do not do that. In fact, as mentioned above, the entire thrust of the instant petition is to allow experimentation with spread-spectrum communications, so as to determine the most efficient, compatible systems relative to amateur narrowband communications. For the Commission to restrict amateur communications so as to avoid interference to Part 15 devices would, however, be completely unprecedented and unwise.

Should you have any concerns about the foregoing, you may rely on the availability of the undersigned.

Yours very truly,



Christopher D. Imlay

cc: Robert McNamara, Esq.
John B. Johnston
Thomas Stanley
Richard Smith
Dr. Michael Marcus
Mitchell Lazarus, Esquire

all via Hand Delivery